

Board of Education Agenda Item

Item: _____ E. _____

Date: _____ May 24, 2006 _____

Topic: First Review of Recommended Cut Scores for the Standards of Learning Mathematics and Reading Tests in Grades 3 through 8

Presenter: Mrs. Shelley Loving-Ryder, Assistant Superintendent, Division of Assessment and Reporting

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Origin:

_____ Topic presented for information only (no board action required)

☒ Board review required by

_____ State or federal law or regulation

☒ Board of Education regulation

_____ Other: _____

☒ Action requested at this meeting _____ Action requested at future meeting: _____ (date)

Previous Review/Action:

☒ No previous board review/action

_____ Previous review/action

date _____

action _____

Background Information:

To meet the requirements of the federal *No Child Left Behind Act of 2001*, new reading and mathematics Standards of Learning (SOL) tests for grades 3 through 8 are being administered in spring 2006.

Consistent with the process used to set cut scores on the other SOL tests, committees of educators were convened to recommend to the Board of Education minimum cut scores on mathematics and reading tests in grades 3 through 8 that represent the achievement levels of basic, pass/proficient and pass/advanced.

Summary of Major Elements:

Information about the range of cut scores recommended by the committees for the mathematics and reading tests for grades 3 through 8 for the achievement levels of basic, pass/proficient and pass/advanced will be presented to the Board. The Board is asked to review this information and to adopt "cut" scores on the mathematics and reading tests at grades 3 through 8 that represent the achievement levels of basic, pass/proficient and pass/advanced.

Superintendent's Recommendation:

The Acting Superintendent of Public Instruction recommends that the Board waive first review and adopt cut scores for the mathematics and reading tests at grades 3 through 8 that represent the achievement levels of basic, pass/proficient and pass/advanced.

Impact on Resources:

N/A

Timetable for Further Review/Action:

N/A

Standard Setting Modified-Angoff Procedure

Standard setting is a systematic way of making a professional judgment on the number of questions on a test that must be answered correctly to signify that a student's achievement is at the *basic*, *proficient* or *advanced* achievement level. The number of questions that a student must answer correctly to be classified as basic, proficient or advanced is called a "cut score." In the case of the *Standards of Learning (SOL) Assessments* for reading and mathematics in grades 3-8, four performance level categories have been established:

Advanced Attainment of the Standards (Pass)
Proficient in the Standards (Pass)
Basic Attainment of the Standards (Fail)
Below Basic Attainment of the Standards (Fail)

One cut score will be established to distinguish *Basic Attainment of the Standards* (Fail) from *Below Basic Attainment of the Standards* (Fail). A second cut score will distinguish *Proficient in the Standards* (Pass) from *Basic Attainment of the Standards* (Fail). A third cut score will distinguish *Advanced Attainment of the Standards* (Pass) from *Proficient in the Standards* (Pass).

The procedure selected for use on the multiple-choice SOL tests is known as the modified-Angoff procedure. This procedure has been widely used on multiple-choice tests for over 35 years and was used in Virginia in standard setting for both the *Minimum Competency Tests* and *Literacy Passport Tests*. Listed below are the steps followed in the application of the modified-Angoff procedure.

1. Judges receive training in the standard-setting process and complete a simulation activity.
2. Judges take the test on which cut scores are to be set to simulate the experience of the students who have taken the test.
3. Judges discuss the performance level descriptor for each achievement level (i.e., Below Basic, Basic, Proficient, and Advanced). Judges discuss definitions of "barely basic understanding," "barely proficient" and "barely advanced" to further define the particular knowledge and skills that separate those students in one achievement level from those in the others.
4. ***Round 1 Ratings:***
Judges independently examine each question on the test, think of 100 *barely proficient* students, and estimate the proportion (percent) of *barely proficient* students who should answer the questions correctly. (Note: Judges are instructed to determine what students *should* do, rather than what they *can* now do.) Judges use the same procedure for the *basic* and *advanced* categories. When Round 1 is completed, each judge has recorded an estimated percent for each question on the test.
5. Each judge's ratings on the questions are averaged and converted to a cut score. As shown in the example on the next page, each judge's ratings across the 10 test questions are averaged (i.e., summed and divided by the number of questions on the test). In the

case of the example shown below, the ratings for Judge 1 are summed (.60 + .65 + .65 + .65 + .60 + .55 + .55 + .60 + .55 + .60 = 6.00) and divided by the number of questions on the test (6.00 / 10 = .60). Thus, Judge 1 has estimated that a student would need to answer 60 percent or six (6) questions correctly to demonstrate proficiency on this ten-question test.

**Example
Four Judges Ratings on a Ten-Question Test**

Question	Judge 1	Judge 2	Judge 3	Judge 4
1	.60	.75	.70	.55
2	.65	.60	.60	.55
3	.65	.65	.60	.50
4	.65	.80	.65	.60
5	.60	.75	.65	.45
6	.55	.80	.60	.45
7	.55	.90	.70	.40
8	.60	.55	.45	.40
9	.55	.65	.50	.55
10	.60	.55	.55	.55
Total	6.0	7.0	6.0	5.0
Average	.60	.70	.60	.50
Cut Score	6	7	6	5

6. The range of cut scores is presented to the judges. In the example, one judge placed the cut at 5, two at 6, and one at 7. Judges discuss their ratings and refine the definitions and descriptors of *barely basic*, *barely proficient* and *barely advanced*.
7. **Round 2 Ratings:**
Judges are provided with a table of each judge's ratings from Round 1, refine the definitions and descriptors, and repeat the process used in Round 1.
8. **Round 3 Ratings:**
Optional.
9. Report of results presented as a recommendation to the Board of Education. The Board will be presented with the range of judges' scores at each of the three cuts.